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HISTORY

OF THE

DISCOVERY

IN

CALIFORNIA

OF A

NATIVE SILK WORM

—BY—

PROF. JOSEPH NEUMANN.

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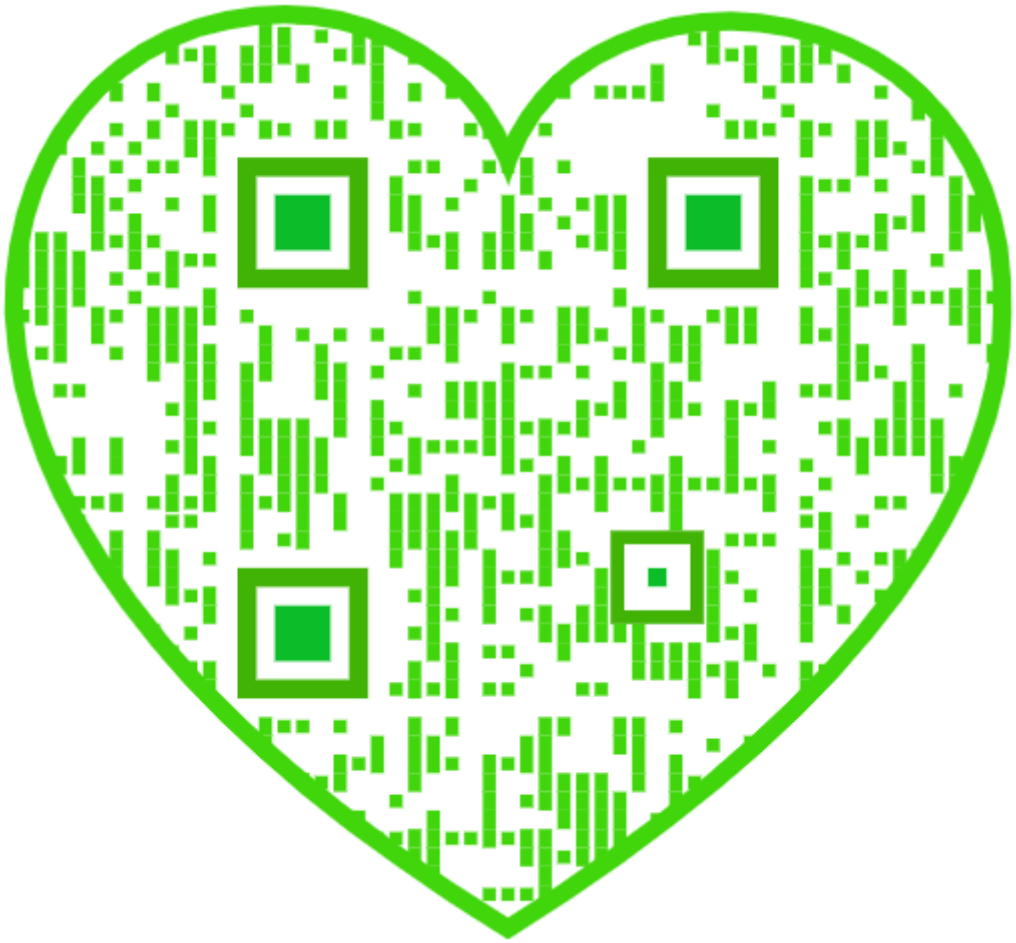

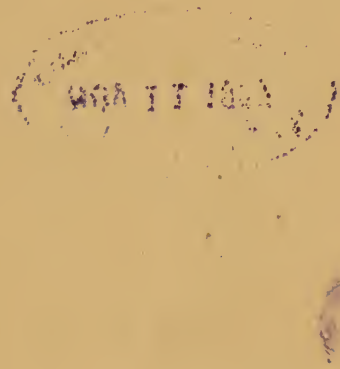

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PREFACE.

Coming in contact with various classes of people and talking over matters of seri-culture with them, I came to the conclusion that verbal information is more expensive than written. Considering, first, the strain upon the vocal organs; second, the time consumed in debating; and principally, that most of the listeners are not quick to comprehend, it is better to have it in a printed form, as any one can then read it at leisure, and make a thorough study upon the subject, moreso, as the following items involve a matter in which the people of the United States and of the world at large are concerned.

SILK CULTURE.

In my struggle to establish silk culture in California, my name became widely known, particularly through my presentation to the National Government, on the 12th of July, 1870, of a silk flag of California production and my own manufacture, which flag was recognized by the U. S. Senate as the first American production, and on April 25th, 1884, it was ordered to be placed for exhibition and preservation at the Smithsonian Institute in Washington, D. C.; and also through my exhibits at the Vienna Exposition, in Austria, in 1873, the Centennial Exposition in Philadelphia in 1876, and various minor exhibitions.

In the fall of 1884, a nephew of mine by the name of Julius S. Arnheim, a naturalist and curio-seeker,

brought to me about six worms, requesting me to investigate them and see to what species they belonged, and at the same time informing me where he had found them, and upon what plant they fed. By feeding the worms until they matured and were ready to spin, I found them spinning a silk cocoon which was well known to me as belonging to the Bombyx family of the Mori Juma May species. In the spring of 1885, the moths appeared, but it was very difficult to obtain eggs for reproduction as they could not very easily be paired. In the fall of the same year, I found a number of worms which I took home and fed until they spun. In the spring of 1886, being then absent in Washington, my children tried to propagate the eggs, and met with the same result. Returning in August of the same year, I again searched for the

worms, and was rewarded by finding a number of them. In the fall they spun cocoons, which I had in Washington, during my exhibit in Congressional Hotel at Capitol Hill, and in March, 1887, the moths appeared. Having had more leisure time, I succeeded in propagating them, and have to show for my success the present crop of live cocoons.

Encouraged by this, I have made further examinations of both the food-plant and worm. Studying up the subject of the multiplication of the worm, I found that the moth lays about 200 eggs. Becoming more enthusiastic upon the subject, I determined to make the matter public. While in Sonoma City feeding the silk worms of the mulberry species, I had the wild worms with me also. They attracted the attention of Dr. L. B. Lawrence, who recog-

nized in the food-plant the bark of what is known in the medical world as the cascara sagrada, a Spanish name meaning " The Sacred Bark " which is used as a laxative and tonic.

My first public exhibition of the same at the 9th Industrial Exhibition held in Santa Rosa, Sonoma Co., Cal., Aug. 22, 28. While there, numerous farmers from the vicinity were astonished at the sight of the wild worm feeding on this plant, and all stated that the plant grew in abundance on their ranches, but not knowing what it was, many of them had uprooted the same for fear of poison. All the farmers on the hill lands had found worms as well as cocoons, but had destroyed them. During the exhibition, I learned that the food-plant possessed another beneficial quality, namely, a cure for poison oak. One of the farmers told me that his

brother who is with him, became so affected by the poison oak which grew in abundance on his land, that he could hardly move. An Indian told him to make a tea from the food-plant, and to wash with it until cured, which was done. In my search for wild worms, I can not very well prevent myself from getting poisoned, especially as the food plant, the wild blackberry, and the poison oak, grow side by side and so I have made use of the advice and am convinced of its curative properties. Here we have a true illustration of the old proverb, that the remedy grows alongside of the evil. I recommend the same for the public welfare, and am only sorry to say that when the gentleman told me about it, my stand was so crowded with people that I neglected to ask his name.

My second public exhibition of the same is now at the 22nd Industrial Ex-

hibition of the Mechanics' Institute in San Francisco. I will here state that the food-plant is variously known as the Rhamnus Californicus, cascara sagrada, and wild coffee plant. A gentleman examined my exhibit, and finding the silkworm feeding upon the coffee plant, informed me that he had experimented grafting the same with the genuine Mexican coffee plant, and was successful in obtaining good coffee. The gentleman's name is James Bixby of Chinese Camp, Tuolumne Co., Cal. Here it can be seen that the plant was almost unknown until the discovery of the wild silkworm; consequently, the world is indebted to the worm for information in regard to the qualities of its food-plant.

I will not speak upon the nature of the silkworm and its product, and the possibility of its further advancement.

The discovery of the wild silkworm on the Pacific Coast is by no means a new one. It was known to the silk world for centuries, that there were several species of the silk worm which fed upon the atlantis tree, the live oak and others. The wild coffee species was not known until the present.

As it is well known that the mulberry species represents a large commercial interest, the question arises in the mercantile world, why the wild species has not been brought forward as an article of commerce? The reason why the product of the wild cocoon all over the globe, with the exception of China, has not been brought forward on any commercial scale, is simply the following: the moths, which emerge from their cocoons in the spring, deposit their eggs on the newly sprouted leaves; the spring may set in early, and a late frost coming

destroys the vitality of the eggs; or, they may be destroyed by such climatic disturbances, as rain, hail, lightning, etc. However, there are always some left to tell the tale, just as a person who is saved from a shipwreck. But it is different in California, where neither rain nor thunder-storms are to be feared from the time that the moth emerges from the cocoon and the eggs are hatched.

As the plant upon which the worm feeds is an evergreen and grows upon the hills all over our State (which is about 750 miles in length by 250 miles in width), and as the worm takes care of itself in the open air, thus requiring no labor, imagine the quantity of silk cocoons that can be produced with very little expense, if all these shrubs were stocked with the native worm.

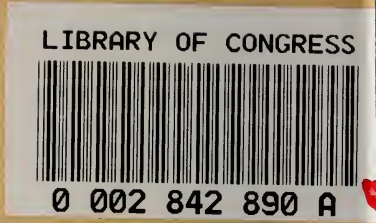
The fiber of the wild cocoon is by far

stronger than the one from the mulberry species. The question of the long or short fiber, i. e., reeled or spun silk, of the cocoons will be answered at a later day by the manufacturers of raw silks, as some of the same species of cocoons, imported from China, are used in France.

I do not say too much when I claim that when our hilly and rocky lands, which to-day would not bring one dollar an acre, will be cultivated with the wild coffee plant, and made to produce from $25 to $150 per acre, it will create a great boom in every part of our glorious State, and for the benefit of all the inhabitants thereof.

JOSEPH NEUMANN,
Author.

San Francisco, Sept. 30th, 1887.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